TECHNICAL NOTES

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE

PLANT MATERIALS - 31 Pullman PMC
Wayne Crowder and Walt Edelen
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Riparian Moisture Zones - Planting Locations of Woody and Herbaceous Species

(Eastern Washington)

Introduction

Riparian revegetation projects along rivers and small streams are conducted on many different sites with various soil and moisture conditions. This information is intended to give the user a place to start in determining where to plant vegetation in relation to the flowing stream and what kinds of plants to use in these different areas. Most revegetative efforts focus on woody vegetation, but may include perennial grasses, sedges and rushes.

Mid-Summer Soil Moisture Level

Hydrophytes such as willows and cottonwoods must be planted deep enough to utilize mid-summer soil moisture. Therefore, emphasis should be placed on determining the soil depth to the mid-summer moisture (low moisture) zone. This can be found by augering into the soil in several locations during late-July to mid-August. Adjustments should be made if observations are made during abnormally dry or wet years.

Depth of soil to the mid-summer moisture zone will dictate 1) cutting/pole length for willows and cottonwoods, 2) planting depth for cuttings/poles and 3) whether supplemental moisture will be necessary to enhance establishment.

General Plant : Soil Moisture Relationships (see Illustration)

Zone 1 Supports hydrophytic vegetation. Mid to short term inundation.

Zone 2 Supports some hydrophytic and upland vegetation. Seasonal inundation. Cuttings/poles must be longer and planted deeper than in zone 1.

Zone 3 Predominantly upland vegetation. Hydrophytes can be used if planted deep enough to utilize summer moisture level.

Planting Considerations

1. Hardwood cuttings are recommended for most plantings at the waterline to mid-bank.

2. Poplar and willows poles are recommended for upper banks and floodplains, where the moisture zone is relatively deep (zone 1 or 2).

3. Plugs, container, bareroot, potted and paper-sleeve rooted stock are most effective when planted:

   - on mid-bank to upper-bank or floodplain where long periods of inundation or water erosion are minimized.

   - where competing vegetation has been removed (minimum of 30" diameter).

   - in areas of low risk to physical damage during first year.

4. In general, spring plantings are advantageous due to naturally high moisture zone and higher humidity.

5. Cuttings planted before high water flows may be lost to erosion.

6. Summer plantings of cuttings can be done with success, but hot temperatures, reduced presence of moisture and shorter growing season can increase risk of failure.

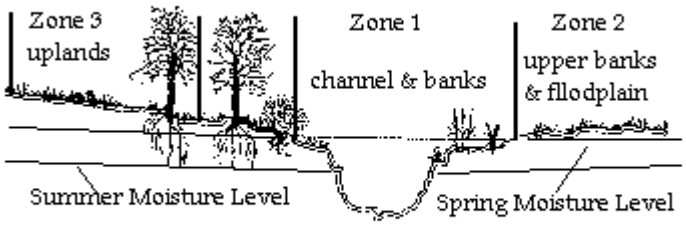
7. Fall plantings allow a longer period of time for establishment before hot, dry summer months, but are susceptible to frost heaving. Poles and whips planted below frost line help minimize frost heaving.

Definitions

Hardwood cuttings are leafless stem cuttings taken during the dormant season.

Whips are flexible hardwood cuttings approximately 4 feet long, usually 1/2 - 3/4 inch in diameter at the basal end.

Pole cuttings are rigid and larger in diameter than whips. Potential diameter of pole cuttings is usually limited by practical things such as cutting weight and equipment ability to make the necessary hole size for planting. Length is usually greater than whips and depends on depth to the mid-summer moisture zone.



common name, (scientific name), probable zone(s) of occurrence

alder (Alnus spp.)	1	chokecherry (Prunus virginiana)	2-3
aspen, quaking (Populus tremuloides)	1	elderberry, blue (Sambucus cerulea)	2-3
birch, water (Betula occidentalis)	1	hawthorn, Douglas (Crataegus douglasii)	3
cottonwood, black (Populus trichocarpa)	1	mockorange (Philadelphus lewisii)	2-3
dogwood, redosier (Cornus stolonifera)	1	oceanspray (Holodiscus discolor)	2
horsetail (Equisetum spp.)	1	redcedar, western (Thuja plicata)	2
redtop (Agrostis alba)	1	rose, native (Rosa spp.)	3
rushes (Juncus spp.)	1	serviceberry (Amelanchier alnifolia)	2-3
sedges (Carex spp.)	1	snowberry (Symphoricarpos albus)	2-3
spiraea (Spiraea spp.)	1		
willows (Salix spp.)	1		

References

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